

R E P O R T R E S U M E S

ED 011 827

RE 000 142

THE ART OF QUESTIONING IN READING.

LOS ANGELES CITY SCHOOLS, CALIF.

REPORT NUMBER IB-EC-117

PUB DATE

66

EDRS PRICE MF-\$0.09 HC-\$0.72 18F.

DESCRIPTORS- *TEACHING GUIDES, *TEACHING TECHNIQUES,
*QUESTIONING TECHNIQUES, *TEACHING PROCEDURES, *READING
INSTRUCTION, TEACHER ROLE,

AN INSTRUCTIONAL BULLETIN FOR WORKSHOP USE TO ASSIST
TEACHERS IN DEVELOPING THOUGHT-PROVOKING QUESTIONS IS
PRESENTED. DERIVED FROM BLOOM'S "TAXONOMY OF EDUCATIONAL
OBJECTIVES" AND "CLASSROOM QUESTIONS--WHAT KIND," THE
PUBLICATION ILLUSTRATES THE POSSIBLE USE OF A TAXONOMY OF
QUESTIONS IN THE CLASSROOM. FOUR SAMPLE LESSONS ILLUSTRATE
EXAMPLES OF QUESTIONS ON THE ADULT LEVEL, THE PRIMER LEVEL,
AND ON THE SECOND- AND SIXTH-GRADE LEVELS WHICH MAY BE USED
DURING THE INITIAL READING OF MATERIAL, THE DIRECTED
REREADING, OR IN THE FOLLOW-UP PERIOD. THE LESSONS INTRODUCE
QUESTIONS IN A SEQUENTIAL ORDER OF DIFFICULTY. ANTICIPATED
PUPIL RESPONSES ARE GIVEN. REFERENCES ARE INCLUDED. (BK)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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1966-67

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THE ART OF QUESTIONING IN READING

LOS ANGELES CITY SCHOOLS
DIVISION OF INSTRUCTIONAL SERVICES
CURRICULUM BRANCH
INSTRUCTIONAL BULLETIN NO. EC-117
1966

ED011827

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INTRODUCTION

Prepared to assist teachers in developing thought-provoking questions, this instructional bulletin is based upon Classroom Questions - What Kind?, which was derived from Bloom's Taxonomy of Educational Objectives. Both sources present organized classifications of educational objectives and provide examples of questions which help to accomplish these objectives.

In this publication, four sample lessons illustrate the possible use of a taxonomy of questions in the classroom. The lessons, each on a different grade level, provide examples of questions that may be used during the initial reading of material, the directed re-reading, or in a follow-up or practice period. Guidelines for teachers are stated in parenthesis. Suggestions will help teachers conduct follow-up activities which specifically develop the skills of critical thinking. In addition, an excerpt from the Teacher's College Record and a series of related questions have been provided. These materials are included so that the teacher may understand more fully the mental processes of pupils as they function at the various levels of question and response.

Each lesson introduces questions in a sequential order of presumed difficulty. In addition, anticipated pupil responses are given as an indication to teachers of what kinds of answers may be expected. In the questions involving synthesis and evaluation, creative and imaginative responses should be elicited, as there are many possible responses to each question. Varying responses are to be expected, because questions of this type require critical or evaluative reasoning. The teacher should encourage divergent thinking and permit pupils to show the basis for their responses.

Although some pupils may be better prepared to think critically on the higher levels of the taxonomy, all pupils should be exposed to all levels of questioning. It is desirable that teachers consider the ability level of individual pupils in conducting class discussions, introducing questions in such a way that the growth of each pupil is encouraged through practice at all levels of the taxonomy. It is not desirable that teachers, in working with children and in referring to kinds of questioning, teach the labels as used in this taxonomy. The value of the exercises lies in helping pupils to examine the thought processes that will lead to the successful solution of problems.

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DEVELOPMENT OF CRITICAL THINKING

Virtually every set of educational objectives includes the development of critical thinking. However, definitions of critical thinking vary among authors; this contributes to uncertainty as teachers evaluate the instructional process to determine pupil skill in this area. For the elementary school instructional program, critical thinking may be defined as all of the thought processes beyond that of factual recall or "memory."

I. Categories of Thinking

1. Memory: The pupil recalls or recognizes information.
2. Translation: The pupil changes information into a different symbolic form or language.
3. Interpretation: The pupil discovers relationships between facts, generalizations, definitions, values, and skills.
4. Application: The pupil solves a lifelike problem that requires the identification of the issue and the selection and use of appropriate generalizations and skills.
5. Analysis: The pupil solves a problem through his conscious knowledge of the parts and forms of thinking.
6. Synthesis: The pupil solves a problem that requires original, creative thinking.
7. Evaluation: The pupil makes a judgment of good or bad, or right or wrong, according to designated standards. Bloom states that standards for evaluation are of two types. The first of these involves primarily internal standards of criticism, and is concerned for the most part with tests for consistency, logical accuracy, and the absence of internal flaws. A second type of evaluation is based on external standards, which derive from "a consideration of the ends to be served and the appropriateness of specific means for achieving these ends. External evaluations are based primarily on considerations of efficiency, economy, or utility of specific means for particular ends."¹

¹ Benjamin S. Bloom (ed.), Taxonomy of Educational Objectives, (New York: David McKay, 1956), pp. 186-87.

The categories are sequential and cumulative. Each category has unique elements, but it also includes some aspect of the preceding categories, as illustrated in the following chart:

INTERRELATIONSHIPS BETWEEN CATEGORIES OF THINKING

1.	Memory	Memory	Memory	Memory	Memory
2.	Translation	Translation	Translation	Translation	Translation
3.	Interpretation	Interpretation	Interpretation	Interpretation	Interpretation
4.	Application	Application	Application	Application	Application
5.			Analysis	Analysis	Analysis
6.				Synthesis	Synthesis
7.					Evaluation

It is possible to provide within each level of thinking questions which range from simple to complex; differences are in the complexity rather than in the kind of thinking which occurs.

II. Principles

To facilitate learning, the teacher applies the basic principles of good questioning and avoids the use of poor practices.¹

A. It is desirable that the teacher:

1. Be aware that memory questions do not provide stimulation nor opportunity for reflection.
2. Ask questions that are sequential and that naturally follow each other. These may or may not be in the order in which they appear in the text.
3. Vary the length and difficulty of questions to motivate more capable and less capable pupils to participate.

¹ Allen Orenstin, "Tips for Teachers," Chicago School Journal (February, 1965), 214-16.

4. Encourage pupils to comment concerning what was said, and to ask clarifying questions of each other.
 5. Allow sufficient time for deliberation.
 6. Encourage responses from all pupils in the group. Use stimulating questions to involve both the aggressive and the reluctant participant.
 7. Involve the pupils in evaluating responses to questions.
 8. Present the objective and the summary of the lesson in question form, preferably as problems eliciting thoughtful consideration.
- B. The teacher should not:
1. Call the name of the pupil before asking the question to encourage consideration of possible answers by all pupils. When a pupil is designated in advance, other pupils feel free to "tune out."
 2. Use indefinite or vague questions, such as "Find out where John went."
 3. Ask questions which convey the answer.
 4. Use questions which may be answered only with "yes" or "no." When such responses are necessary, the questions also should require elaboration in terms of "how" or "why," etc.
 5. Ask questions which are not clear and which may confuse pupils.
 6. Furnish answers when pupils should be capable of providing them. This procedure causes the discussion to be teacher-directed and -centered rather than pupil-centered.
 7. Repeat or restate questions asked by pupils.
 8. Restate answers to questions unless further clarification is needed.
 9. Exploit more capable pupils or volunteers to the exclusion of other class members. All pupils should be involved, participating at their own levels of competence.
 10. Allow choral responses or handwaving. This behavior tends to intimidate the shy or less capable pupils.
 11. Accept incomplete or inappropriate answers.

PRODUCTIVE QUESTIONS*

After students complete a unit of study, let's say, of the medieval period, hopefully just as many questions or more would be raised in their minds as when they began the study. If the questions are catalytic to further inquiry, and there is every reason to believe they are, then it seems that one of the teacher's tasks is to develop instructional strategies that elicit important and relevant questions as the students proceed through their individual inquiries. These newly emerging questions, combined with the data obtained through the study unit, should provide fuel for further, more sophisticated inquiries. One test of the achievement of this type of behavior might be to ask students when they complete a unit to list as many questions as they can that they think would be important for obtaining a fuller understanding of the material they have just studied. Such a list could be scored for the number and quality of the questions, quality being defined by the relevance and centrality of the questions raised.

In many classrooms, teachers themselves raise such questions. These questions, however, are not be to conceived as indications of questing because, in almost all cases, teachers have the answer to the questions they raise. Such queries whet the intellectual appetites of students and are tactical devices in teaching. But students who raise such questions are not formulating teaching tactics: rather, their questions often indicate that the study has opened rather than closed their curiosity. This does not mean that all questions raised by students in the classroom are of the questing variety. A student who asks, "Miss Jones, did you say page 237 or 247?" is clearly seeking clarification; he is not questing. But a student who asks, "How did the Crusaders determine their travel routes to the Holy Land?" or "Why didn't the Black Muslims become Black Buddhists?" is opening up a new domain of inquiry, one that most teachers could use quite profitably with the student and the class.

One of my colleagues, Cyril Houle, has noted that there are roughly three types of adults who are continuing learners (8). One group consists of those who are goal-oriented and who use their learning as instruments for practical rather than theoretical ends. A second group consists of those who are activity oriented; they join study and discussion groups primarily to obtain some sort of companionship or participation with others. The third group, the learning-oriented one, seeks knowledge for its own sake. Their pursuit of knowledge is generated by the love of learning. While these, Houle claims, are not pure types, "the central emphasis of each subgroup is clearly discernible." The questing student, while perhaps not solely motivated by the quest for its own sake, is probably more closely allied to it than to the other two types. The questing student, then, is an eager, curious, questioning individual who takes pleasure in wonder and whose desire to learn and experience is motivated more by joy in this activity than by any other motive. If this type of attitude is significant in determining who will continue to inquire when the guidance of the teacher is absent, then it is an aspect of critical thinking that should be deliberately nurtured by the school.

* Elliot W. Eisner, "Critical Thinking: Some Cognitive Components," Teacher's College Record, 66 (April, 1965), 628-629. Reproduced by permission of the author and publisher.

LEVEL: Adult

CONTENT: "Critical Thinking: Some Cognitive Components," Eisner, Elliot W., Teacher's College Record, 66 (April, 1965), 628-629.

(This is a practical exercise at the adult level designed to develop concepts of critical thinking.)

QUESTIONS		ANTICIPATED RESPONSES
<u>Memory</u>	1. Indicate what is one of the teacher's main tasks if the material being studied leads to further inquiry.	1. Develop instructional strategies that elicit important and relevant questions as the pupils proceed through their individual inquiries.
<u>Translation</u>	2. Differentiate between teacher devised questions for tactical teaching purposes and pupil questions.	2. The teacher's purpose is to stimulate the pupils thinking process. The teacher usually has the answer in mind. The pupil's purpose is a true questing for new information or knowledge unless it is a clarifying question; such as the exact page to be used in the assignment.
<u>Interpretation</u>	3. Relate these questions to the three different types of learners described by Houle. a. What are the specifics of the Fernald approach to teaching dyslexic children? b. What are the similarities and differences between the techniques of Socrates, Kant, and Schweitzer? c. How would this hand be bid under the Goren system?	3. a. Goal-oriented b. Learning-oriented c. Activity-oriented
<u>Application</u>	4. Assume that pupils in a given class parallel the adult learners described by Houle. Indicate what questions could be asked about "The Discovery of Gold at Sutter's Fort" that would challenge these three types of learners.	4.

Analysis

5. Explain why it is important to develop within elementary school pupils the ability to think critically about the content of a given subject area.

5. Last two sentences, Column 1, p. 629.

Synthesis

6. Describe how the process of learning that is pupil-centered is affected by:

6.

a. Constant teacher guidance

a. Is not likely to develop if continued without planning for growth in self-desire for learning.

b. Availability of teacher guidance

b. Must be preceded or paralleled by development of the pupil's ability to be self-directed.

c. Lack of teacher guidance

c. Ideally continues without ill-effect if an appropriate background has been developed.

Evaluation

7. Cite what evidence is contained in this article which could lead us to say that questions set up by pupils and teachers for the study of a given book or unit of literature should be continually re-evaluated and reorganized.

7.

LEVEL: Primer

CONTENT: "A Birthday Cake," The Little White House (Boston: Ginn, 1961), pp. 65-70.

(These questions are intended to be used in the guided re-reading portion of the Directed Reading Lesson. It is assumed that the guided silent reading will have been concluded.)

QUESTIONS

Memory 1. a. Ask, "What did Susan do when she was left alone in the room with the birthday cake? Lena, will you please answer this question?"

b. Read the lines which answer this question. b. "I will help Mother...here and here."

Translation 2. Read the lines which tell why Susan placed the candles on the cake. 2. "I will help Mother."

ANTICIPATED PUPIL RESPONSES

CLARIFICATION PROCEDURE WHEN PUPIL RESPONSE IS INCORRECT

If pupil reads the other lines in paragraph 2, discuss whether these lines tell why Susan placed the candles, or whether they describe action by Susan. Questions which will guide this discussion and anticipated responses are listed below. Both are evaluative in nature.

QUESTIONS

1. Read the last paragraph on page 68 to determine which sentence best tells why Susan placed candles on the cake.

2. Read the sentences that tell what Susan did.
3. Now, read the sentence which tells that Susan wanted to do something for her mother.

4. Ask, "What does the last sentence on page 68 tell you?"

5. Ask, "Does this sentence tell you about the way Susan feels toward Tom, or does it tell why she placed the candles on the cake?"

6. Read the lines in the last paragraph that best tell why Susan placed the candles on the cake.

RESPONSES

1. "I will help Mother," said Susan.
or
"Tom likes red candles."

2. "I will help...
I will put this...
I will put candles..." (Lines 4-6, p. 68)

3. "I will help..."

4. That Tom likes red candles.

5. How she feels about Tom; that she likes him.

6. "I will help Mother," ...

Interpretation

3. Ask, "How did it happen that Susan was left alone with the cake?"

3. Mother was called by Betty to answer the door.

Application

4. Ask, "Had Susan really helped her mother?"
Read the lines in the story which caused you to reply as you did.

4. No. "Tom is seven. He will want seven candles." (Lines 4, 5, p. 70)

Analysis

5. Ask, "How might Susan have acted differently had she known the meaning of each candle?"

5. She might have spent more time counting the candles to see how many were already on the cake before putting on more. Or...

Evaluation

6. a. Ask, "Why was it that her mother did not punish Susan for what she did?"

6. a. Her mother realized that Susan did not understand the meaning of the candles.

b. Ask, "Why was it that her mother did not let Susan have her way?"

b. It was more important to have the correct number of candles on the cake than for Susan to have her way, because Tom would have been disappointed if the number were incorrect.

LEVEL: Grade Two

CONTENT: "Ranch Life," Town and Country, (Boston: Allyn and Bacon, 1961), pp. 160-162.

(These questions are to be introduced early in the Directed Reading Lesson. They can motivate the reading of passages, or be assigned to various pupils if a selection is to be read without interruption.)

QUESTIONS		ANTICIPATED PUPIL RESPONSES	
<u>Memory</u>	1. Read to learn the names of Jack's and Nancy's horses.	1. Jack's horse is named Blackie. Nancy's horse is named Lucky.	
<u>Translation</u>	2. Ask, "What do you call a place where horses are kept?" Read to find the word that you think names this place.	2. A place where horses are kept is called a <u>corral</u> .	
<u>Interpretation</u>	3. Ask, "How would a horse show that he was friendly?" Read the first two pages to find a sentence which tells how Nancy's horse showed that he was friendly.	3. He put his head in her hand.	
<u>Application</u>	4. Ask, "How did your pet receive its name? How many of our pets receive their names?" Read the first two pages to find out what a good name might be for Uncle Jim's horse.	4. Children will respond with a variety of answers. Pets are named by colors or some other distinguishing characteristic. Spot, Paint, Checkers...	
<u>Analysis</u>	5. Ask, "What makes a happy day for you?" Read the first two pages to find why this was a happy day for Jack and Nancy.	5. Children will respond with a variety of reasons. It is their birthday. It is the first day on the ranch. They may go horsebackriding. Each has his own horse.	
<u>Synthesis</u>	6. Ask, "What kind of a day do you think Nancy and Jack will have at the ranch?" Read the first two pages to find whether your own answer is correct.	6. Pupils will suggest various ideas such as happy, exciting, interesting, busy.	
<u>Evaluation</u>	7. a. Ask, "What would be a happy day for you?" b. Ask, "What happens in the story that you believe shows that Jack and Nancy have a happy day?"	7. a. List briefly those event that would make a happy day for pupils. b. List briefly the events from the story that pupils believe show that Jack and Nancy have a happy day.	

LEVEL: Fourth Grade

CONTENT: "Quiet Boy," Believe and Make-Believe, (Boston: Allyn and Bacon, 1961), pp. 260-262.

(These questions are intended to be used as individual practice activities (follow-up) to develop the comprehension skill of critical reading. "Memory" questioning is omitted because it is adequately covered in the prepared follow-up materials. Refer to Reading Follow-up Activities Grade Four, Part Two (based on Believe and Make-Believe), Los Angeles City Schools Instructional Bulletin No. EC-56, p. 64.)

QUESTIONS

ANTICIPATED PUPIL RESPONSES

Memory

1. See above notation.

Translation

2. How do you think Quiet Boy felt about waiting for his family? Write your answer in a short sentence.

2. Quiet Boy did not mind waiting, as he was used to it.

Interpretation

3. What are some ways in which Quiet Boy earned his name? List at least three.

3. a. He waited quietly for his family.
b. He said nothing when Lester made fun of him.
c. He said nothing after the fight with Lester.
d. He remained quiet on the trip home.

Application

4. How do you think Quiet Boy would act if he were a member of our class in the following situations? Write short sentences describing what might occur in each situation.

4. If Quiet Boy were a member of our class, he might:

a. A classroom discussion

a. be polite to others; not participate enough, speak softly; listen carefully to others.

b. A quarrel on the playground

b. avoid a fight; not argue when provoked; listen to the other person.

c. As a school safety monitor

c. be very fair; stay on the job; listen to both sides.

Analysis

5. What kind of boy is Quiet Boy? Write sentences to support this topic sentence:

5. Pupils may write the following supporting sentences:

Quiet Boy is patient and well-mannered.

He waited for his family patiently.
He wanted to work on the farm but stayed in school.
He remained silent when Lester spoke to him.

Synthesis

6. a. What might Quiet Boy be thinking about on the trip home?
(To develop background for responses, pupils may discuss such topics as what Quiet Boy might be thinking: while waiting for his family; when Lester first spoke to him; when his father pulled him away from Lester.)

- b. Write a short paragraph about his thoughts on the way home.

Evaluation

7. a. What character traits does Quiet Boy show by his actions in the story?

6. a. Encourage a variety of responses to encourage divergent thinking. Ask each pupil to document his response.

- b. Pupil's written paragraph.

7. a. List Quiet Boy's traits as they are suggested by pupils. Accept all responses without challenge.

Possible responses:

- | | |
|----------------|--------------|
| Patience | Kindness |
| Honesty | Self-Control |
| Truthfulness | Obedience |
| Responsibility | |

- b. Describe, in a few words, evidence found in the story that, in your judgement, shows one of the traits we listed. If you find no evidence of the trait given, write "No evidence."

- b. List evidence of Quiet Boy's traits taken from the story.

<u>Suggested Traits</u>	<u>Action, Statement or thought</u>
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Patience	He waited quietly for his family. He did not respond to Lester. He waited in the wagon.
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Honesty	No evidence.
Truthfulness	No evidence.
Responsibility	He wanted to work on the farm when needed.

Kindness	He did not want to injure an animal.
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Self-Control	He held his temper when Lester teased him.
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Obedience	He went to school because his father asked him to go.
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LEVEL: Sixth Grade

CONTENT: "Hill Farm in New England," Wings to Adventure, (Boston: Ginn, 1961). pp. 156-168.
(These questions are intended to be used in the development of structural analysis skills, using the suffixes: al, ic, ical, age, and ive. This sample lesson may be used in conducting a total-group activity for initial development or review of this particular skill. Trade books or other readers may be used, in addition to Wings to Adventure.)

QUESTIONS		ANTICIPATED PUPIL RESPONSES	
Memory	1. Ask, "What is the meaning of the suffixes in the following words? John, will you please list them on the board as the meanings are given."	1.	...act of a person or thing. ...of or belonging to. ...having to do with. ...the result of. ...having the nature or quality of.
	rehearsal _____ heroic _____ electrical _____ shrinkage _____ defensive _____		
Translation	2. Ask, "Which of these words (typical; metallic; natural) have the following meaning?"	2.	
	a. like metal b. of a type c. characteristic of nature		a. metallic b. typical c. natural
Interpretation	3. Write these four meanings for the suffix <u>age</u> on the chalkboard: (1) the act or process of; (2) the result of; (3) the total amount of; and (4) the fee charged for. Ask pupils to write the appropriate meaning beside each of the underlined words in these sentences:	3.	
	a. The <u>acreage</u> extended for miles. b. The <u>postage</u> was 60¢. c. There was little <u>shrinkage</u> in the value of the dollar this year. d. The <u>passage</u> included meals. e. We forgot to figure the <u>mileage</u> in our plans.		a. (3), the total amount of. b. (4), the fee charged for. c. (2), the result of. d. (4), the fee charged for. e. (3), the total amount of.

Application

4. List these meanings of some suffixes and examples of words that contain them on the chalkboard.

-al (al)	refusal
a. Of or characteristic of	rehearsal
b. The act of a person or thing	

-ive (iv)	attractive
a. Having the nature or quality of	defensive
b. That may or is likely to	

-ic (ik)	heroic
a. Of or belonging to	dramatic
b. Having to do with	
c. Coming from	
d. Like	

a. Ask, "How do the definitions of the suffixes help you to understand the meanings of words that contain the suffixes? Paul, will you answer the question."

b. Say, "Skim through your library books to find words which contain one of the suffixes listed. Let's make a list of these words and of the meanings that you suggest?"

.....

Mary, read the sentence you have found; then tell us what the word is, which suffix you used, and the root form of the word.

4.

a. If we know the meaning of the root word and the meaning of the suffix, the two meanings can be combined in the definition of the new word.

b. Pupils will respond with words which they find. They will apply the idea and state the meaning of each word.

Analysis

5. Ask, "Which of the words below contain ic as a suffix? Which contain it as part of the root? Write the words under the proper heading. 5.

panic
electronic
telegraphic
music
comic

Part of the root
A suffix
A suffix
Part of the root
Part of the root

Synthesis

6. Ask, "How does the addition of one of the suffixes listed on the chalkboard (al, ic, ical, age, ive) change the meanings of these words? Write a sentence using each word given. Write a second sentence using the derived form of the word."

shrink

Clothing often will shrink when washed.
A shrinkage in the value of the dollar was reported.
Etc.

rehearse
electric
type

Evaluation

7. a. Ask, "What changes are made by the addition of a suffix to a root in the following examples?"

acre - acreage
metal - metallic
defend - defensive

7. a. The meaning is changed. The spelling is changed. The pronunciation, including the accent, may be changed.

- b. Ask, "What are some examples of words with suffixes that you think would be difficult for sixth-grade pupils? Try to find examples of each kind of change brought about by the use of a suffix, form and specify the changes."

- b. Pupils will find examples of words with suffixes that they think would be difficult for sixth-graders, write both the root and the derived form and specify the changes.

patriot - patriotic There are changes in pronunciation, accent, and meaning.